

Interactive comment on “Modelling study of the impact of deep convection on the UTLS air composition – Part I: Analysis of ozone precursors” by V. Marécal et al.

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We agree that to make a fair comparison between MOPITT CO and the model CO, the model CO profiles have to be smoothed by the MOPITT averaging kernels. Applying the averaging kernels to the model CO profiles implies that MOPITT CO and model outputs are coincident. In our case there is no coincidence since there were no MOPITT CO data available for or close to the period of the simulation (data gap between 4 and 17 Feb 2001 except few data available on 13 Feb.). Therefore, it is not possible to apply the averaging kernels to the model CO. The only possibility was to compare the unsmoothed model CO to MOPITT CO monthly mean. After Deeter et al. 2003 and Deeter et al. 2004, the averaging kernels for the retrieval pressure 700 hPa are maxi-

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mum at 700 hPa and 500 hPa over tropical oceanic areas. We have therefore assumed that the CO MOPITT ratio at 700 hPa can be compared with the model mean between 500 hPa and 700 hPa. Since the model grid considered is half covered by tropical ocean and cloud-free areas are mainly over ocean for the model times considered, this approximation is reasonable. In our paper, we have presented statistical comparisons. Part of the differences between the model variability and MOPITT variability is likely related to the actual averaging kernels that could not be taken into account in our study. In the revised version of the paper, we intend to give more details on why we could not use the MOPITT averaging kernels, more justification of the approximation used and more discussion on the results.

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 9127, 2005.

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